2. Alignment and Adjustments

2-1 Adjustments

2-1-1 General Alignment Instructions

Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as vertical size, horizontal size, and focus. Observe the picture and check for good black and white details. There must be no objectionable color shading: If color shading is present, demagnetize the receiver. If color shading persists, re-do purity and convergence adjustments.

Note :

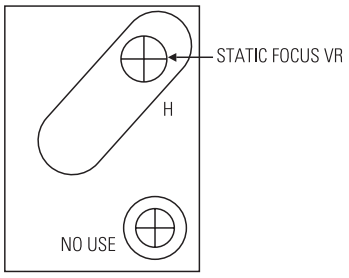
1. This '4. Alignment and Adjustments' applies to S61A chassis applications.
2. AC Power Supply: 160~300V or 100~240V, 50Hz
3. This service manual has been written on the basis of domestic remote-control model adopting S61A chassis. Depending on sales location and product specifications, some of specifications herein may be changed.

2-1-2 Focus Adjustment

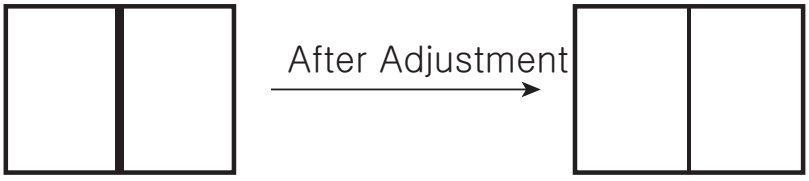
S61A contains a dynamic focus circuit. When CRT PCB, FBT or CRT is replaced, be sure to adjust in the following sequence:

Focus Adjustment

1. Input a crosshatch pattern.
2. Select "Standard" from the menu,
3. Turn the Static Focus VR clockwise to set it to its maximum.
4. Turn the Static Focus VR counterclockwise slowly for the clearest center vertical line.
5. Turn the Dynamic Focus VR clockwise slowly for the clearest third line.
6. Check for the FOCUS of entire screen. If necessary, re-do adjustments 3~5.



<FBT FOCUS PACK>



2-1-3 Screen Voltage Adjustment

1. Input a Toshiba pattern.

2. Use an oscilloscope to identify RK, BK, GK. And then adjust FBT Screen VR so that the voltage of pedestal level doesn't exceed 160V.
   If a Toshiba pattern is not available, cancel the blue screen and input "No Signal" to AV IN so the voltage of pedestal level doesn't exceed 175V.
   If an oscilloscope is not available, use a DC multi-meter in No Signal (black screen) to adjust RK, BK, GK so that the highest voltage becomes 160Vp-p.

2-1-4 White Balance Adjustment

1. Warm up the TV set for at least 30 minutes.

2. Enter the Service Mode by pressing the remote control keys in the following sequence:
   Power Off ½ Display ½ Menu ½ Mute ½ Power On

3. Initialize all set data.

4. Input a Toshiba pattern.

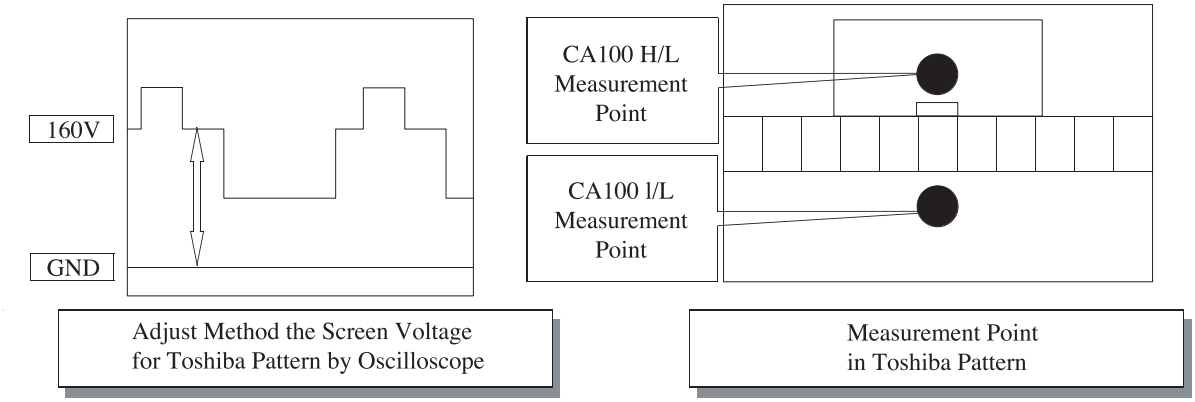
5. Using a probe(CA100), do the White Balance adjustments.

   (1) Adjust Low-Light.
   - Adjust Sub Brightness to set Y.
   - Adjust B Cutoff to set y.
   - Adjust R Cutoff to set x.

   (2) Adjust High-Light.
   - Adjust Sub Contrast to set Y.
   - Adjust B Drive to set y.
   - Adjust R Drive to set x.

   (3) Check the value of Low-Light. If necessary, readjust Low-Light.

   (4) Check the value of High-Light. If necessary, readjust High-Light.15



Adjust Method the Screen Voltage for Toshiba Pattern by Oscilloscope

Measurement Point in Toshiba Pattern

2-1-5 When adjusting Screen Voltage and White Balance

1. Screen Voltage and White Balance are related each other. Make sure both adjustments are correct.

2. Adjust Screen Voltage before White Balance Adjustments. Make sure Screen Voltage is correct.

3. If White Balance has been readjusted, re-check Screen Voltage.

4. After adjustments are complete, check the following.
   - If spots appear on the screen after pressing the Power On/Off key, readjust Screen Voltage.
   - If flyback lines appear on the screen, readjust Screen Voltage.

2-2 MICOM PORT

<table>
<tr><th>PIN</th><th>FUNCTION</th><th>FIRST STATE</th><th>ASSIGMENT</th></tr>
<tr><td>1</td><td>DO1</td><td></td><td rowspan="4">EPROM & SRAM DATA LINE</td></tr>
<tr><td>2</td><td>DO4</td><td></td></tr>
<tr><td>3</td><td>DO2</td><td></td></tr>
<tr><td>4</td><td>DO3</td><td></td></tr>
<tr><td>5</td><td>XROM'</td><td></td><td></td></tr>
<tr><td>6</td><td>VDD 2.5V</td><td></td><td></td></tr>
<tr><td>7</td><td>GND</td><td></td><td></td></tr>
<tr><td>8</td><td>VDD 3.3V</td><td></td><td></td></tr>
<tr><td>9</td><td>W-PROT/STOP</td><td></td><td>- EEPROM WRITE PROTECTION / BUS STOP</td></tr>
<tr><td>10</td><td>EEPROM SDA</td><td></td><td>- EEPROM SDA LINE</td></tr>
<tr><td>11</td><td>EEPROM SCL</td><td></td><td>- EEPROM SCL LINE</td></tr>
<tr><td>12</td><td>--</td><td></td><td>--</td></tr>
<tr><td>13</td><td>MAIN SDA</td><td></td><td>- SDA9489/VSP941X/CXA2165/CXA2151/SP34XX/TUNER</td></tr>
<tr><td>14</td><td>MAIN SCL</td><td></td><td>- SDA9489/VSP941X/CXA2165/CXA2151/SP34XX/TUNER</td></tr>
<tr><td>15</td><td>--</td><td></td><td></td></tr>
<tr><td>16</td><td>--</td><td></td><td></td></tr>
<tr><td>17</td><td>ENE'</td><td></td><td></td></tr>
<tr><td>18</td><td>STOP'</td><td></td><td rowspan="2"></td></tr>
<tr><td>19</td><td>OCF</td><td></td></tr>
<tr><td>20</td><td>EXTIF'</td><td></td><td></td></tr>
<tr><td>21</td><td>CVBS IN</td><td></td><td>- TTX source Line (1V p-p)</td></tr>
<tr><td>22</td><td>VDD 2.5V</td><td></td><td></td></tr>
<tr><td>23</td><td>GND</td><td></td><td>- Analog GND</td></tr>
<tr><td>24</td><td>AFT</td><td></td><td>- Main AFT Control</td></tr>
<tr><td>25</td><td>SC1-ID</td><td></td><td rowspan="2"><table><tr><th></th><th>TV MODE</th><th>AV 16:9 MODE</th><th>AV 4:3 MODE</th></tr><tr><td>RANGE</td><td>0 ~ 2V</td><td>4.5 ~7V</td><td>9.5 ~ 12V</td></tr></table></td></tr>
<tr><td>26</td><td>SC2-ID</td><td></td></tr>
<tr><td>27</td><td>KEY-1</td><td></td><td><table><tr><th></th><th>MENU</th><th>VOL -</th><th>VOL +</th><th>CH -</th><th>CH +</th></tr><tr><td>Input</td><td>0~0.1V</td><td>0.1~0.7V</td><td>0.7V~1.3V</td><td>1.3V~1.9V</td><td>1.9~2.4V</td></tr></table></td></tr>
<tr><td>28</td><td>NC</td><td></td><td></td></tr>
<tr><td>29</td><td>H-SYNC</td><td></td><td>- MICOM "H-SYNC" POSITIVE (H-BLANK)</td></tr>
<tr><td>30</td><td>V-SYNC</td><td></td><td>- MICOM "Y-SYNC" POSITIVE (Y-BLANK)</td></tr>
<tr><td>31</td><td>KEY2</td><td></td><td>- TV/VIDEO Control</td></tr>
<tr><td>32</td><td>TXD</td><td></td><td></td></tr>
<tr><td>33</td><td>2165 F0</td><td></td><td><table><tr><th>F1</th><th>F0</th><th>fH</th></tr><tr><td>L</td><td>M</td><td>31.5KHz</td></tr><tr><td>M</td><td>L</td><td>33.83KHz (1080i)</td></tr></table>L : Connect to GND
M : Open the Pin</td></tr>
</table>

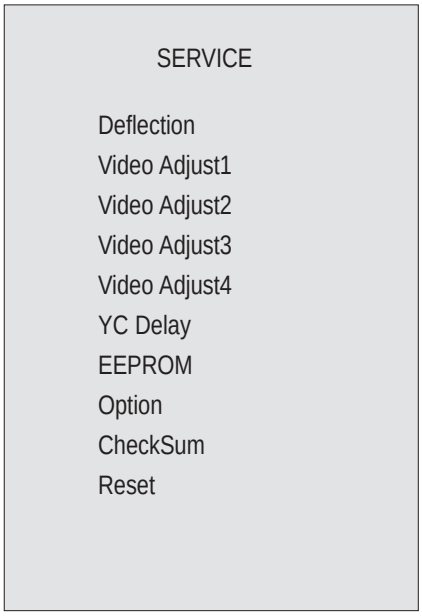
PIN	FUNCTION	FIRST STATE	ASSIGMENT
34	IR-IN		- Remocon Input jack
35	STD-LED		
36	TIM-LED		-TIME ON : H TIME OFF : L
37	2165 F1		
38	RXD		
39	GND		
40	VDD 3.3V		
41	PX.Y		
42	PX.Y		- OSD F/B
43	1080i		- 1080i 60Hz / 1080i 50Hz /
44	S-AV ID		- SIDE AV S-Video JACK IDENT
45	V-RESET		- F-BOX RESET CONTROL
46	POWER		- Active "LOW"
47	D-COIL		- DEGAUSSING COIL CONTROL
48	S-RESET		- MSP34XX IC RESET
49	S-MUTE		- SOUND AMP MUTE
50	RESET		- Reset pin
51	NC		
52	X-IN		- Crystal (6MHz) Input jack
53	X-OUT		- Crystal (6MHz) Input jack
54	NC_54		
55	GND		
56	VDD2.5V		
57	OSD-R		- OSD R-OUT Output (0.38V p-p), Half-Tone : 0.9V p-p
58	OSD-G		- OSD G-OUT Output (0.38V p-p), Half-Tone : 0.9V p-p
59	OSD-B		- OSD B-OUT Output (0.38V p-p), Half-Tone : 0.9V p-p
60	BLANK/CORE		- OSD F/B(SAND PULSE CLAMP "LOW" Half-Tone")
61	NC_61		
62	TILT		- Control
63	NC_63		
64	WR'		
65	RD'		
66	NC_66		
67	A19		EPROM & SRAM ADDRESS LINE
68	A18		
69	A16		
70	A17		

PIN	FUNCTION	FIRST STATE	ASSIGMENT
71	A15		EPROM & SRAM ADDRESS LINE
72	FL_PGM		
73	VDD 2.5V		
74	GND		
75	VDD 3.3V		
76	A14		EPROM & SRAM ADDRESS LINE
77	A12		
78	A13		
79	A7		
80	FL_RST		
81	A8		EPROM & SRAM ADDRESS LINE
82	A6		
83	A9		
84	A5		
85	A11		
86	A4		
87	ALE		
88	PSEN '		
89	A3		EPROM & SRAM ADDRESS LINE
90	A10		
91	GND		
92	VDD3.3V		
93	A2		EPROM & SRAM ADDRESS LINE
94	A1		
95	FL_CE		
96	DO7		EPROM & SRAM DATA LINE
97	A0		EPROM & SRAM ADDRESS LINE
98	DO6		EPROM & SRAMDATA LINE
99	D00		
100	DO5		

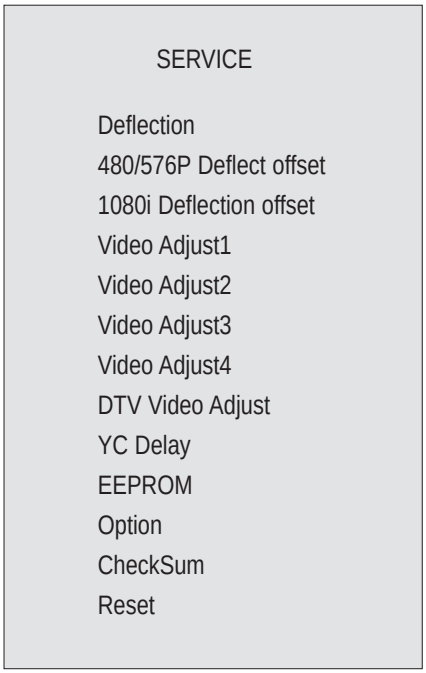
2-3 Factory Adjustment

2-3-1 Factory Adjustment values

European Model



The Others Model



2-3-2 Factory Data

DEFLECTION : PAL

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
V-AMP	26	26	26	26	26	26	26	26	26	26	26	26	26	Vertical AMP adj(Gain Control)
V-SHIFT	30	30	30	30	30	30	30	30	30	30	30	30	30	Vertical Position adj (DC bias adj)
H-EW	33	33	33	33	33	33	33	33	33	33	33	33	33	Horizontal AMP adj(Gain Control)
H-SHIFT	35	35	35	35	35	35	35	35	35	35	35	35	35	Horizontal Position adj (DC bias adj)
V-Linearity	6	6	6	6	6	6	5	5	6	6	6	6	6	Vertical Linearity adj(TOP/Bottom adj)
UP-Linearity	8	8	8	8	8	8	8	8	8	8	8	8	8	Vertical Linearity adj(TOP adj)
LOW-Linearity	4	4	4	4	4	4	4	4	4	4	4	4	4	Vertical Linearity adj(Bottom adj)
V-SC	5	5	5	5	5	5	5	5	5	5	5	5	5	Vertical S correction adj
H-Parablar	48	48	48	48	48	48	48	48	48	48	48	48	48	Horizontal pin distortion adj
UP-Coner	35	35	35	35	35	35	35	35	35	35	35	35	35	Horizontal pin distortion up adj
LOW-Coner	36	36	36	36	36	36	36	36	36	36	36	36	36	Horizontal pin distortion low adj
H-Trapezium	12	12	12	12	12	12	12	12	12	12	12	12	12	Horizontal Trapezium distortion adj
BOW	31	31	31	31	31	31	31	31	31	31	31	31	31	Vertical line slope adj(parabola)
ANGLE	25	25	25	25	25	25	25	25	25	25	25	25	25	Vertical Linearity adj(sawtooth)
V-Position	40	40	40	40	40	40	40	40	40	40	40	40	40	V-POSITION ADJ as to CRT INCH
CXA 2151 Sub01	68	68	68	68	68	68	68	68	68	68	68	68	68	
CXA 2151 Sub02	1	1	1	1	1	1	1	1	1	1	1	1	1	

DEFLECTION : NTSC

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
V-AMP	0	0	0	0	0	0	0	0	0	0	0	0	0	Vertical AMP adj(Gain Control)
V-SHIFT	2	2	2	2	2	2	2	2	2	2	2	2	2	Vertical Position adj (DC bias adj)
H-EW	1	1	1	1	1	1	1	1	1	1	1	1	1	Horizontal AMP adj(Gain Control)
H-SHIFT	9	9	9	9	9	9	9	9	9	9	9	9	9	Horizontal Position adj (DC bias adj)
V-Linearity	2	2	2	2	2	2	2	2	2	2	2	2	2	Vertical Linearity adj(TOP/Bottom adj)
UP-Linearity	1	1	1	1	1	1	1	1	1	1	1	1	1	Vertical Linearity adj(TOP adj)
LOW-Linearity	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	Vertical Linearity adj(Bottom adj)
V-SC	0	0	0	0	0	0	0	0	0	0	0	0	0	Vertical S correction adj
H-Parablar	0	0	0	0	0	0	0	0	0	0	0	0	0	Horizontal pin distortion adj
UP-Coner	2	2	2	2	2	2	2	2	2	2	2	2	2	Horizontal pin distortion up adj
LOW-Coner	3	3	3	3	3	3	3	3	3	3	3	3	3	Horizontal pin distortion low adj
H-Trapezium	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	Horizontal Trapezium distortion adj
BOW	1	1	1	1	1	1	1	1	1	1	1	1	1	Vertical line slope adj(parabola)
ANGLE	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	Vertical Linearity adj(sawtooth)
V-Position	0	0	0	0	0	0	0	0	0	0	0	0	0	V-POSITION ADJ as to CRT INCH
CXA 2151 Sub01	68	68	68	68	68	68	68	68	68	68	68	68	68	
CXA 2151 Sub02	1	1	1	1	1	1	1	1	1	1	1	1	1	

Video Adjust 1

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
EE_R_CUTOFF,	35	35	35	35	35	35	35	35	35	35	35	35	35	R-cutoff control adj
EE_G_CUTOFF,	25	25	25	25	25	25	35	35	25	25	25	25	25	G-cutoff control adj
EE_B_CUTOFF,	40	40	40	40	40	40	40	40	40	40	40	40	40	B-cutoff control adj
Color On / Off	1	1	1	1	1	1	1	1	1	1	1	1	1	Initial Value : "0"--> 1
CR Offset	30	30	30	30	30	30	30	30	30	30	30	30	30	DC-offset canceling
CB Offest	30	30	30	30	30	30	30	30	30	30	30	30	30	DC-offset canceling
R Drive	32	32	32	32	32	32	32	32	32	32	32	32	32	R-Drive control adj
G Drive	25	25	25	25	25	25	28	28	25	25	25	25	25	G-Drive control adj
B Drive	41	41	41	41	41	41	41	41	41	41	41	41	41	B-Drive control adj
Sub Bright	48	48	48	48	48	48	48	48	48	48	48	48	48	Sub-Bright control
Sub Contrast	9	9	9	9	9	9	9	9	9	9	9	9	9	Sub-Contrast control
Sub Color	10	10	10	10	10	10	10	10	10	10	10	10	10	color gain control(PAL SETTING AGAIN)
Secam sub color	5	5	5	5	5	5	5	5	5	5	5	5	5	HUE control
Sub Tint	28	28	28	28	28	28	28	28	28	28	28	28	28	Chrominance Transient Improvement
CTI Level	2	2	2	2	2	2	2	2	2	2	2	2	2	color detection axis setting(NTSC/USA)
Color AXIS	1	1	1	1	1	1	1	1	1	1	1	1	1	Luminance Transient Improvement
LTI Level	1	1	1	1	1	1	1	1	1	1	1	1	1	vertical osd position

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
ABL Mode	3	3	3	3	3	3	3	3	3	3	3	3	3	picture/bright ABL gain control(PAL SETTING AGAIN)
Gamma	2	2	2	2	2	2	3	3	2	2	2	2	2	RGB output correction control(PAL SETTING AGAIN)
DPIC Level	3	3	3	3	3	3	3	3	3	3	3	3	3	Dynamic picture black expansion control(PAL SETTING AGAIN)
DC Trans	2	2	2	2	2	2	2	2	2	2	2	2	2	Y-System DC transmission ratio(PAL SETTING AGAIN)
ABL-TH	14	14	14	14	14	14	14	14	14	14	14	14	14	Threshold voltage adj ABL-IN(PAL SETTING AGAIN)
VM-Level	2	2	2	2	2	2	2	2	2	2	2	2	2	VM-OUT Level control
VM-Coring	2	2	2	2	2	2	2	2	2	2	2	2	2	VM-OUT coring control
VM-f0	2	2	2	2	2	2	2	2	2	2	2	2	2	VM-f0 control
VM-Limit	2	2	2	2	2	2	2	2	2	2	2	2	2	VM-Limit level control
VM-Delay	3	3	3	3	3	3	3	3	3	3	3	3	3	VM-OUT phase control(reference to R-OUT)
SHP CD	1	1	1	1	1	1	1	1	1	1	1	1	1	Sharpness gain control(color satuation)
SHP f0	0	0	0	0	0	0	0	0	0	0	0	0	0	Sharpness f0 control (3Mhz)
SHP f1& p/o	8	8	8	8	8	8	8	8	8	8	8	8	8	Sharpness gain control(PAL SETTING AGAIN)
AKB Time	15	15	15	15	15	15	15	15	15	15	15	15	15	AKB Bch reference pulse time control(PAL SETTING AGAIN)
Coring	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bandpass	7	7	7	7	7	7	7	7	7	7	7	7	7	VSP9402 Band/High pass filter(Peaking)
Highpass	8	8	8	8	8	8	10	10	8	8	8	8	8	VSP9402 High pass filter

Video Adjust 3

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
H_EHT comp	4	4	4	4	4	4	3	3	4	4	4	4	4	H-EHT compensation setting(PAL SETTING AGAIN)
V_EHT comp	7	7	7	7	7	7	7	7	7	7	7	7	7	V-EHT compensation setting(PAL SETTING AGAIN)
PIN EHT comp	1	1	1	1	1	1	1	1	1	1	1	1	1	PIN-EHT compensation setting
AFC EHT comp	0	0	0	0	0	0	0	0	0	0	0	0	0	(PAL SETTING AGAIN)
Sync Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	AFC-EHT compensation
NR Value	6	6	6	6	6	6	6	6	6	6	6	6	6	WHEN USED 74HC123
PIP Contrast	13	13	13	13	13	13	13	13	13	13	13	13	13	Not used
PIP Bright	0	0	0	0	0	0	0	0	0	0	0	0	0	
PIP Tint	63	63	63	63	63	63	63	63	63	63	63	63	63	
PIP Color	6	6	6	6	6	6	6	6	6	6	6	6	6	
PIP Pal V Pos	28	28	28	28	28	28	28	28	28	28	28	28	28	
PIP NTSC V Pos	25	25	25	25	25	25	25	25	25	25	25	25	25	
PIP H Pos	34	34	34	34	34	34	34	34	34	34	34	34	34	
PIP R Cut off	1	1	1	1	1	1	1	1	1	1	1	1	1	
PIP G Cut off	1	1	1	1	1	1	1	1	1	1	1	1	1	
PIP B Cut off	1	1	1	1	1	1	1	1	1	1	1	1	1	
PIP R Drive	56	56	56	56	56	56	56	56	56	56	56	56	56	

Video Adjust 4

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
3Pip Pal V position	11	11	11	11	11	11	11	11	11	11	11	11	11	PIP Option
3Pip Pal H Position	13	13	13	13	13	13	13	13	13	13	13	13	13	PIP Option
3Pip Ntsc V Position	12	12	12	12	12	12	12	12	12	12	12	12	12	PIP Option
3Pip Ntsc H Position	19	19	19	19	19	19	19	19	19	19	19	19	19	PIP Option
Sync Phase (480p)	1	1	1	1	1	1	1	1	1	1	1	1	1	DTV Option
Sync Phase (576p)	1	1	1	1	1	1	1	1	1	1	1	1	1	DTV Option
Sync Phase (1080i)	0	0	0	0	0	0	0	0	0	0	0	0	0	DTV Option

YC Delay

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
P.YC (AV) Delay	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
S.YC (AV) Delay	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	
N.YC (AV) Delay	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	
P.BG.YC Delay	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	
P.DK.YC Delay	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	
P.I.YC Delay	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	
P.M.YC DELAY	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
P.L.YC Delay	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	
S.BG.YC Delay	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	
S.DK.YC Delay	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	

480p Deflection OFFSET

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
V Amp	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
V_SHIFT	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
H EW	2	2	2	2	2	2	2	2	2	2	2	2	2	
H Shift	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	
V Linearity	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
Upper-Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lower-Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
V SC	0	0	0	0	0	0	0	0	0	0	0	0	0	
H Parablar	0	0	0	0	0	0	0	0	0	0	0	0	0	
Upper Corner	4	4	4	4	4	4	4	4	4	4	4	4	4	
Lower Corner	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
H Trapezium	11	11	11	11	11	11	11	11	11	11	11	11	11	
Bow	0	0	0	0	0	0	0	0	0	0	0	0	0	
Angle	0	0	0	0	0	0	0	0	0	0	0	0	0	
V Position	0	0	0	0	0	0	0	0	0	0	0	0	0	
CXA 2151 Sub01	232	232	232	232	232	232	232	232	232	232	232	232	232	
CXA 2151 Sub02	97	97	97	97	97	97	97	97	97	97	97	97	97	

576p Deflection OFFSET

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
V Amp	1	1	1	1	1	1	1	1	1	1	1	1	1	
V_SHIFT	1	1	1	1	1	1	1	1	1	1	1	1	1	
H EW	0	0	0	0	0	0	0	0	0	0	0	0	0	
H Shift	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
V Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
Upper-Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lower-Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
V SC	0	0	0	0	0	0	0	0	0	0	0	0	0	
H Parablar	0	0	0	0	0	0	0	0	0	0	0	0	0	
Upper Corner	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lower Corner	1	1	1	1	1	1	1	1	1	1	1	1	1	
H Trapezium	6	6	6	6	6	6	6	6	6	6	6	6	6	
Bow	0	0	0	0	0	0	0	0	0	0	0	0	0	
Angle	2	2	2	2	2	2	2	2	2	2	2	2	2	
V Position	0	0	0	0	0	0	0	0	0	0	0	0	0	
CXA 2151 Sub01	232	232	232	232	232	232	232	232	232	232	232	232	232	
CXA 2151 Sub02	97	97	97	97	97	97	97	97	97	97	97	97	97	

1080I Deflection OFFSET

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
V Amp	3	3	3	3	3	3	3	3	3	3	3	3	3	
V_SHIFT	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
H EW	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	
H Shift	8	8	8	8	8	8	8	8	8	8	8	8	8	
V Linearity	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	
Upper-Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lower-Linearity	0	0	0	0	0	0	0	0	0	0	0	0	0	
V SC	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
H Parablar	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
Upper Corner	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lower Corner	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	
H Trapezium	10	10	10	10	10	10	10	10	10	10	10	10	10	
Bow	2	2	2	2	2	2	2	2	2	2	2	2	2	
Angle	1	1	1	1	1	1	1	1	1	1	1	1	1	
V Position	0	0	0	0	0	0	0	0	0	0	0	0	0	
CXA 2151 Sub01	196	196	196	196	196	196	196	196	196	196	196	196	196	
CXA 2151 Sub02	97	97	97	97	97	97	97	97	97	97	97	97	97	

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
Sub Bright	10	10	10	10	10	10	10	10	10	10	10	10	10	
Sub Contrast	6	6	6	6	6	6	6	6	6	6	6	6	6	
Sub Color	15	15	15	15	15	15	15	15	15	15	15	15	15	
Sub Tint (Hue)	25	25	25	25	25	25	25	25	25	25	25	25	25	
Color AXIS	1	1	1	1	1	1	1	1	1	1	1	1	1	
LTI Level	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-Level	1	1	1	1	1	1	1	1	1	1	1	1	1	
VM-Coring	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-f0	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-Limit	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-Delay	3	3	3	3	3	3	3	3	3	3	3	3	3	
SHP CD	1	1	1	1	1	1	1	1	1	1	1	1	1	
SHP f0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SHP f1& p10	8	8	8	8	8	8	8	8	8	8	8	8	8	

DTV Adjust(576P/480P)

ITEMS	CIS			Europe			China		Asia			M.Asia		REMARK
	29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”	
Sub Bright	12	12	12	12	12	12	12	12	12	12	12	12	12	
Sub Contrast	7	7	7	7	7	7	7	7	7	7	7	7	7	
Sub Color	12	12	12	12	12	12	12	12	12	12	12	12	12	
Sub Tint (Hue)	26	26	26	26	26	26	26	26	26	26	26	26	26	
Color AXIS	1	1	1	1	1	1	1	1	1	1	1	1	1	
LTI Level	1	1	1	1	1	1	1	1	1	1	1	1	1	
VM-Level	1	1	1	1	1	1	1	1	1	1	1	1	1	
VM-Coring	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-f0	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-Limit	2	2	2	2	2	2	2	2	2	2	2	2	2	
VM-Delay	3	3	3	3	3	3	3	3	3	3	3	3	3	
SHP CD	1	1	1	1	1	1	1	1	1	1	1	1	1	
SHP f0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SHP f1& p10	8	8	8	8	8	8	8	8	8	8	8	8	8	

ITEMS	CIS		Europe		China	Asia		M.Asia		REMARK
	29”/34”	32"	29"	28"/32”	29"/34"	29”/34”	32"	29”	32”	
CRT	4;3	Wide	4:3	Wide	4;3	4;3	Wide	4;3	Wide	4:3,WIDE
Osd Group	CIS		-		China	East Asia		Arab or Persia		CIS,Arab,Persia, Europe,East Asia,China
OSD Language	Russian		-		chinese	Engilish		Engilish		Pertinent language
AV-Jack	Scart		Scart		Rca	Rca		Rca(Scart)		SCART(CIS,EUROPE)/RCA(ASIA,AUSTRAILIA)
DTV	No		No		Yes	No		No		DTV S/W data control
PIP	2-tuner		off		off	2-tuner		2-tuner		"off","1-tuner","2-tuner"
LNA	On		off		off	On		On		On : 2T PIP All Model Off: 1TUNER / No PIP
SEARCH_LNA	On		off		off	On		On		On : 2T PIP LNA All Model Off: 1TUNER / No PIP"
SOUND	Virtual Dolby		Virtual Dolby		Virtual Dolby	Virtual Dolby		Virtual Dolby		V-DOLBY/A2-NICAM
Auto FM	On		On		On	On		On		On : FM Auto change(All model) Off : MODE ON(Currently nothing)
Carrier mute	Off		On		Off	Off		Off		On:Europe/Italy Off:Other
HIGH Deviation	Off		Off		On	Off		Off		ON : INDIA ,KOREA Other : OFF
Woofer	Off		Off		Off	Off		Off		
TTX Group	Russian		Osd Language		west europe	west europe		west europe		TTX Language Group
TTX TOP	Off		off		Off	Off		Off		ON : German,Swiss OFF : Other Area
TTX LIST	Off		off		Off	Off		Off		ON : Australia OFF : Other Area
TTX ON/OFF	On		off		Off	off		Off		OFF/ON : TTX ON or OFF
DTV1080I	60HZ		60HZ		50HZ	60HZ		60HZ		50HZ: Australia,China 60HZ: Southeast Asia area
Digital NR	On		On		On	On		On		ON : Digital NR ON OFF :Digital NR OFF
AGC on/off	off		off		off	off		off		ON : sync In standard AGC gain control(Overflow control) OFF : AGC gain fixed value
Tilt on/off	ON		ON		ON	ON		ON		ON : Tilt function ON (OSD display) OFF : Tilt function OFF (OSD no display)

EEPROM Data

No.	Items	CIS			Europe			China		Asia			M.Asia	
		29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”
0	System	1	1	1	1	1	1	1	1	1	1	1	1	1
1		-	-	-	-	-	-	-	-	-	-	-	-	-
2	System (480p)	2	2	2	2	2	2	2	2	2	2	2	2	2
3	System (1080i)	3	3	3	3	3	3	3	3	3	3	3	3	3
4	Dynamic Contrast	100	100	100	100	100	100	100	100	100	100	100	100	100
5	Dynamic Brightness	50	50	50	50	50	50	50	50	50	50	50	50	50
6	Dynamic Shapness	55	55	55	55	55	55	55	55	55	55	55	55	55
7	Dynamic Color	50	50	50	50	50	50	50	50	50	50	50	50	50
8	Dynamic Tint	50	50	50	50	50	50	50	50	50	50	50	50	50
9	Dynamic Color Tone													
10	Standard Contrast	70	70	70	70	70	70	70	70	70	70	70	70	70
11	Standard Brightness	50	50	50	50	50	50	50	50	50	50	50	50	50
12	Standard Shapness	50	50	50	50	50	50	50	50	50	50	50	50	50
13	Standard Color	50	50	50	50	50	50	50	50	50	50	50	50	50
14	Standard Tint	50	50	50	50	50	50	50	50	50	50	50	50	50
15	Standard Color Tone	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Movie Contrast	40	40	40	40	40	40	40	40	40	40	40	40	40
17	Movie Brightness	50	50	50	50	50	50	50	50	50	50	50	50	50
18	Movie Shapness	40	40	40	40	40	40	40	40	40	40	40	40	40
19	Movie Color	45	45	45	45	45	45	45	45	45	45	45	45	45
20	Movie Tint	50	50	50	50	50	50	50	50	50	50	50	50	50
21	Movie Color Tone	-	-	-	-	-	-	-	-	-	-	-	-	-
22														
23														
24														
25														
26	Left Blanking (480p)	215	215	215	215	215	215	215	215	215	215	215	215	215

No.	Items	CIS			Europe			China		Asia			M.Asia	
		29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”
27	Right Blanking (480p)	169	169	169	169	169	169	169	169	169	169	169	169	169
28	Left Blanking (1080i)	141	141	141	141	141	141	141	141	141	141	141	141	141
29	Right Blanking (1080i)	109	109	109	109	109	109	109	109	109	109	109	109	109
30	Brightness (RGB)	236	236	236	236	236	236	236	236	236	236	236	236	236
31	Contrast (RGB)	169	169	169	169	169	169	169	169	169	169	169	169	169
32	U Saturation (RGB)	94	94	94	94	94	94	94	94	94	94	94	94	94
33	V Saturation (RGB)	36	36	36	36	36	36	36	36	36	36	36	36	36
34	DVD Brightness (YPbPr)	221	221	221	221	221	221	221	221	221	221	221	221	221
35	DVD Contrast (YPbPr)	166	166	166	166	166	166	166	166	166	166	166	166	166
36	DVD U Saturation (YPbPr)	122	122	122	122	122	122	122	122	122	122	122	122	122
37	DVD V Saturation (YPbPr)	57	57	57	57	57	57	57	57	57	57	57	57	57
38	9402 Y Gain	175	175	175	175	175	175	175	175	175	175	175	175	175
39	9402 U Gain	71	71	71	71	71	71	71	71	71	71	71	71	71
40														
41	9402 V Gain	65	65	65	65	65	65	65	65	65	65	65	65	65
42	CrCb Gain (480p)	119	119	119	119	119	119	119	119	119	119	119	119	119
43	CrCb Gain (1080i)	119	119	119	119	119	119	119	119	119	119	119	119	119
44	LTI Mode	2	2	2	2	2	2	2	2	2	2	2	2	2
45														
46	LTI Mode (480p)	1	1	1	1	1	1	1	1	1	1	1	1	1
47	LTI Mode (1080i)	1	1	1	1	1	1	1	1	1	1	1	1	1
48	NR ON value1	85	85	85	85	85	85	85	85	85	85	85	85	85
49	NR ON value2	85	85	85	85	85	85	85	85	85	85	85	85	85
50	NR OFF value1	68	68	68	68	68	68	68	68	68	68	68	68	68
51	NR OFF value2	68	68	68	68	68	68	68	68	68	68	68	68	68
52	NR ON value3	170	170	170	170	170	170	170	170	170	170	170	170	170
53	NR ON value4	170	170	170	170	170	170	170	170	170	170	170	170	170

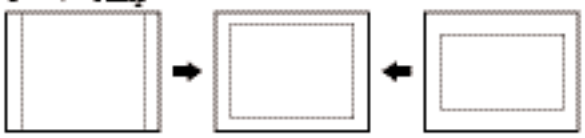
No.	Items	CIS			Europe			China		Asia			M.Asia	
		29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”
54	NR OFF value3	34	34	34	34	34	34	34	34	34	34	34	34	34
55	NR OFF value4	34	34	34	34	34	34	34	34	34	34	34	34	34
56														
57	SECAM Sensitivity	28	28	28	28	28	28	28	28	28	28	28	28	28
58	Range of R Gain	32	32	32	32	32	32	32	32	32	32	32	32	32
59	Range of G Gain	32	32	32	32	32	32	32	32	32	32	32	32	32
60	Range of B Gain	32	32	32	32	32	32	32	32	32	32	32	32	32
61	Range of F/B Gain	23	23	23	23	23	23	23	23	23	23	23	23	23
62														
63	TTX V-Position	40	40	40	40	40	40	40	40	40	40	40	40	40
64	TTX H-Position	180	180	180	180	180	180	180	180	180	180	180	180	180
65														
66														
67	wide model 4:3 Normal Parabola	0	0	0	0	0	0	0	0	0	0	0	0	0
68	1080i 50HZ Trepezium	-	-	-	-	-	-	-	-	-	-	-	-	-
69	1080i 60HZ Trepezium	-	-	-	-	-	-	-	-	-	-	-	-	-
70	UP-UCG (Up Corner Semi Control)	0	0	0	0	0	0	0	0	0	0	0	0	0
71	LO-UCG (Low Corner Semi Control)	0	0	0	0	0	0	0	0	0	0	0	0	0
72	Vertical Slicing Level Threshold	15	15	15	15	15	15	15	15	15	15	15	15	15
73	Vertical Sync Lowpass-Filter	13	13	13	13	13	13	13	13	13	13	13	13	13
74	Amplifier Current Setting of Oscillator Pad	2	2	2	2	2	2	2	2	2	2	2	2	2
75	PAL	185	185	185	185	185	185	185	185	185	185	185	185	185
76	Chroma (PAL)	215	215	215	215	215	215	215	215	215	215	215	215	215

No.	Items	CIS			Europe			China		Asia			M.Asia	
		29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”
77	Chroma PLL adj is ("0" Auto PLL, "0")	-	-	-	-	-	-	-	-	-	-	-	-	-
78	WSS 4:3 Panorama	-	-	-	-	-	-	-	-	-	-	-	-	-
79	NT left blank	79	79	79	79	79	79	79	79	79	79	79	79	79
80	NT Right blank	126	126	126	126	126	126	126	126	126	126	126	126	126
81	Progressive TTX V Position	-	-	-	-	-	-	-	-	-	-	-	-	-
82	Progressive TTX H-Position	-	-	-	-	-	-	-	-	-	-	-	-	-
83	Cr gain(480p)	46	46	46	46	46	46	46	46	46	46	46	46	46
84	Cb gain(480p)	35	35	35	35	35	35	35	35	35	35	35	35	35
85	Cr gain(576p)	43	43	43	43	43	43	43	43	43	43	43	43	43
86	Cr gain(576p)	30	30	30	30	30	30	30	30	30	30	30	30	30
87	Cr gain(1080i)	22	22	22	22	22	22	22	22	22	22	22	22	22
88	Cb gain(1080i)	27	27	27	27	27	27	27	27	27	27	27	27	27
89														
90	RF SubBright	124	124	124	124	124	124	124	124	124	124	124	124	124
91	TTX Sub Brightness°a	235	235	235	235	235	235	235	235	235	235	235	235	235
92	Left Blanking	101	101	101	101	101	101	101	101	101	101	101	101	101
93	Right Blanking	153	153	153	153	153	153	153	153	153	153	153	153	153
94	S - ABL	0	0	0	0	0	0	0	0	0	0	0	0	0
95	P - ABL	48	48	48	48	48	48	48	48	48	48	48	48	48
96	Picture Limit Level	3	3	3	3	3	3	3	3	3	3	3	3	3
97	OSD Level (LRGB2_LEV)	5	5	5	5	5	5	5	5	5	5	5	5	5
98	TTX Level (LRGB2_LEV)	3	3	3	3	3	3	3	3	3	3	3	3	3
99	AGCADJ1	238	238	238	238	238	238	238	238	238	238	238	238	238

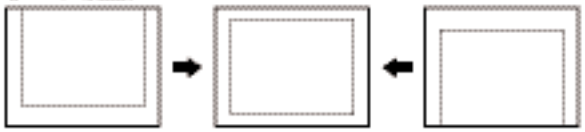
No.	Items	CIS			Europe			China		Asia			M.Asia	
		29”	32”	34"	28"	29"	32”	29"	34"	29”	32”	34"	29”	32”
100	AGCADJ2	110	110	110	110	110	110	110	110	110	110	110	110	110
101	ON TIMER CH memory	1	1	1	1	1	1	1	1	1	1	1	1	1
102	Component2 OSD Brightness	10	10	10	10	10	10	10	10	10	10	10	10	10
196	TNR1	207	207	207	207	207	207	207	207	207	207	207	207	207
197	TNR2	175	175	175	175	175	175	175	175	175	175	175	175	175
198	TNR3	149	149	149	149	149	149	149	149	149	149	149	149	149
199	TNR4	127	127	127	127	127	127	127	127	127	127	127	127	127
200	TNR5	99	99	99	99	99	99	99	99	99	99	99	99	99
201	TNR6	31	31	31	31	31	31	31	31	31	31	31	31	31
202														
203														
204														
205	HPLL timing	156	156	156	156	156	156	156	156	156	156	156	156	156

2-4 Screen Change(I²C Bus Geometric Adjustment)

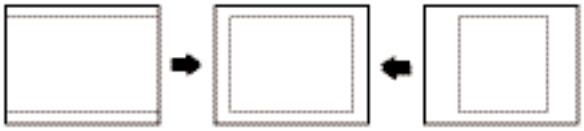
0 V - Amp



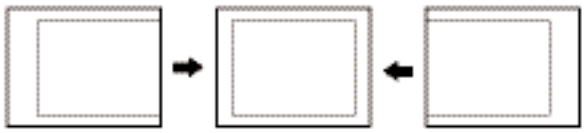
1 V-Shift



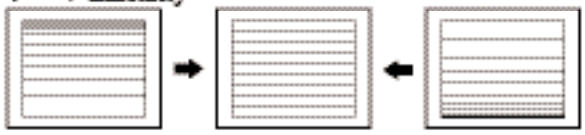
2 H-EW



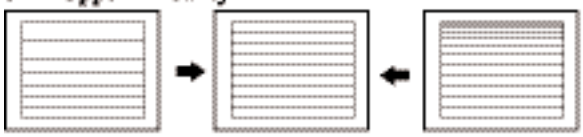
3 H-Shift



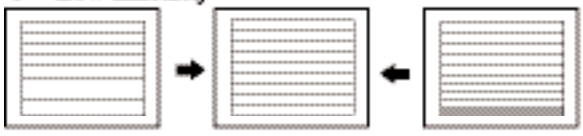
4 V-Linearity



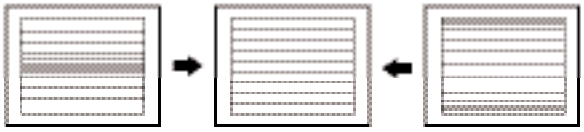
5 Upper Linearity



6 Low Linearity

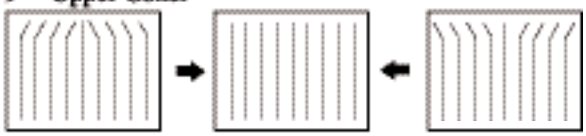


7 V SC

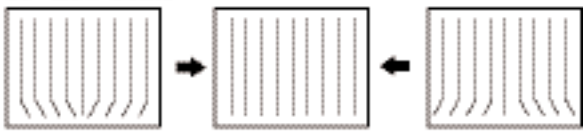


8 H-Parabola

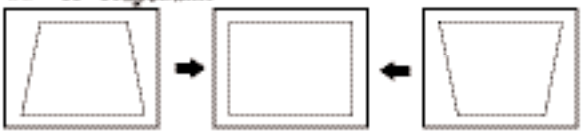
9 Upper Coner



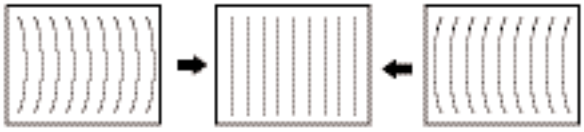
10 Low Coner



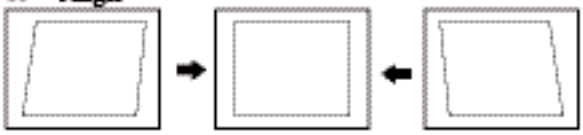
11 H- Trapezuim



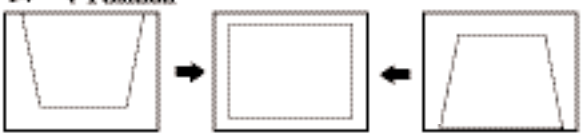
12 Bow



13 Angle



14 V Position



MEMO